



**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 52**

**[EPA-R09-OAR-2014-0185; FRL-9911-03-Region 9]**

**Approval and Promulgation of Implementation Plans; California;  
South Coast 1-Hour and 8-Hour Ozone**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to approve the portions of a State implementation plan (SIP) revision submitted by the State of California on February 13, 2013 that relate to attainment of the 1-hour and 1997 8-hour ozone national ambient air quality standards in the Los Angeles-South Coast area. Specifically, the EPA is proposing to approve the portions of the South Coast Air Quality Management District's *Final 2012 Air Quality Management Plan* that update the approved control strategy for the 1997 8-hour ozone standard and that provide a demonstration of attainment of the 1-hour ozone standard by December 31, 2022. In proposing approval, EPA finds that an attainment date of December 31, 2022 is appropriate in light of the severity of the 1-hour ozone problem in the South Coast and, given the extent to which emissions sources in the South Coast have already been controlled, the limited emissions remaining that can be regulated. EPA is

proposing as part of this action to approve new commitments adopted by the South Coast Air Quality Management District, updated new technology measures, and a new commitment by the California Air Resources Board to submit contingency measures in 2019 as necessary to meet the emissions reductions targets for 2022 from implementation of new technology measures.

**DATES:** Any comments must arrive by [Insert date 30 days from the date of publication in the Federal Register].

**ADDRESSES:** Submit comments, identified by docket number EPA-R09-OAR-2014-0185, by one of the following methods:

- Federal eRulemaking Portal: [www.regulations.gov](http://www.regulations.gov). Follow the on-line instructions.
- E-mail: [tax.wienke@epa.gov](mailto:tax.wienke@epa.gov).
- Mail or deliver: Wienke Tax, Office of Air Planning (AIR-2), U.S. Environmental Protection Agency Region IX, 75 Hawthorne Street, San Francisco, CA 94105.

Instructions: All comments will be included in the public docket without change and may be made available online at [www.regulations.gov](http://www.regulations.gov), including any personal information provided, unless the comment includes Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Information that you consider CBI or otherwise protected should be clearly identified as such and

should not be submitted through [www.regulations.gov](http://www.regulations.gov) or e-mail. The [www.regulations.gov](http://www.regulations.gov) website is an "anonymous access" system, and EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send e-mail directly to EPA, your e-mail address will be automatically captured and included as part of the public comment. If EPA cannot read your comments due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment.

Docket: The index to the docket for this action is available electronically on the [www.regulations.gov](http://www.regulations.gov) website and in hard copy at EPA Region IX, 75 Hawthorne Street, San Francisco, California, 94105. While all documents in the docket are listed in the index, some information may be publicly available only at the hard copy location (e.g., copyrighted material or large maps), and some may not be publicly available at either location (e.g., CBI). To inspect the hard copy materials, please schedule an appointment during normal business hours with the contact listed in the **FOR FURTHER INFORMATION CONTACT** section below.

**FOR FURTHER INFORMATION CONTACT:** Wienke Tax, Air Planning Office (AIR-2), U.S. Environmental Protection Agency, Region IX, (415) 947-4192, [tax.wienke@epa.gov](mailto:tax.wienke@epa.gov).

**SUPPLEMENTARY INFORMATION:** Throughout this document, "we," "us" and "our" refer to the EPA.

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**I. Background**

Ground-level ozone is an oxidant that is formed from photochemical reactions in the atmosphere between volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) in the presence of sunlight. These two pollutants, referred to as ozone precursors, are emitted by many types of pollution sources including on-road motor vehicles (cars, trucks, and buses), nonroad vehicles and engines, power plants and industrial facilities, and smaller area sources such as lawn and garden equipment and paints.

Under section 109 of the Clean Air Act (CAA or Act), EPA promulgates national ambient air quality standards (NAAQS or standards) for pervasive air pollutants, such as ozone. The NAAQS are concentration levels that, the attainment and maintenance of which, EPA has determined to be requisite to protect public health and welfare. In 1979, EPA established the

1-hour ozone NAAQS of 0.12 parts per million (ppm).<sup>1</sup> Section 110 of the CAA requires States to develop and submit state implementation plans (SIPs) to implement, maintain, and enforce the NAAQS.

Under the Clean Air Act, as amended in 1977, EPA designated all areas of the country as "nonattainment," "attainment," or "unclassifiable" with respect to each NAAQS, and in so doing, designated the South Coast<sup>2</sup> as a nonattainment area for photochemical oxidant (later ozone). See 43 FR 8962 (March 3, 1978). States with nonattainment areas are required to submit revisions to their SIPs that include a control strategy necessary to demonstrate how the area will attain the NAAQS, and EPA took action on a number of related SIP revisions submitted by the California Air Resources Board (CARB) in the late 1970s and 1980s for the South Coast 1-hour ozone nonattainment area.<sup>3</sup> However, by 1990, like many other areas throughout the country, the South Coast had not attained the 1-hour ozone standard, and under the CAA Amendments of 1990, the South Coast was classified

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<sup>1</sup> See 44 FR 8202 (February 8, 1979).

<sup>2</sup> The South Coast includes Orange County, the southwestern two-thirds of Los Angeles County, southwestern San Bernardino County, and western Riverside County (see 40 CFR 81.305).

<sup>3</sup> Under California law, CARB is the state agency that is responsible for submitting SIPs and SIP revisions to EPA. CARB is also responsible for the regulation of mobile sources in California. Regional air quality management districts, such as the South Coast Air Quality Management District (SCAQMD or "District"), are responsible for developing and adopting regional air quality plans and for regulating stationary sources. Once adopted, the plans developed by the regional air quality management districts are submitted to CARB for adoption as part of the California SIP and then submitted to EPA for approval or disapproval under section 110 of the CAA.

as an "extreme" nonattainment area for the 1-hour ozone standard with an attainment deadline of November 15, 2010 (56 FR 56694, November 6, 1991) and was subject to additional SIP planning requirements, including a revised attainment demonstration.

In the wake of the classification of the South Coast nonattainment area as "extreme" for the 1-hour ozone standard, CARB submitted a number of SIP revisions for the South Coast that contained attainment demonstrations for the 1-hour ozone standard and that relied on a combination of mobile source control measures adopted by CARB and stationary source control measures adopted by South Coast Air Quality Management District (SCAQMD). In connection with these submittals, EPA took the following actions:

- 1994 South Coast Air Quality Management Plan (AQMP) and related state strategy ("1994 AQMP") - EPA approved the 1-hour ozone attainment demonstration at 62 FR 1150 (January 8, 1997);
- 1997 AQMP, as revised in 1999 ("1997/1999 AQMP") - EPA approved the revised 1-hour ozone demonstration at 65 FR 18903 (April 10, 2000); and
- 2003 AQMP and related state strategy ("2003 AQMP") - EPA disapproved the revised 1-hour ozone attainment demonstration at 74 FR 10176 (March 10, 2009).

Each of these plans rely on a regulatory foundation of regulations adopted and implemented by the SCAQMD, CARB, and EPA for stationary and mobile sources, and also include commitments for new or more stringent regulations to achieve additional emissions reductions necessary for attainment. Each subsequent ozone plan then builds upon the foundation of the new or strengthened regulations that were adopted to support the previous plan. While the emissions reduction measures implemented under these South Coast ozone plans have been successful in reducing ozone concentrations in the South Coast,<sup>4</sup> the South Coast failed to attain the 1-hour ozone standard by the applicable attainment date of 2010.<sup>5</sup>

Meanwhile, in 1997, EPA revised the NAAQS for ozone, setting it at 0.08 ppm averaged over an 8-hour timeframe (referred to herein as the "1997 8-hour ozone standard") to replace the existing 1-hour ozone standard of 0.12 ppm.<sup>6,7</sup> In

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<sup>4</sup> For example, the annual number of days at any one monitoring station during which the 1-hour ozone standard was exceeded decreased from 103 days to 6 days between 1990 and 2010 despite significant increases in population, employment and vehicle travel. The maximum 1-hour ozone concentration measured in the South Coast decreased from 0.33 ppm to 0.14 ppm over the same period.

<sup>5</sup> 76 FR 82133 (December 30, 2011).

<sup>6</sup> 62 FR 33856 (July 18, 1997).

<sup>7</sup> On March 27, 2008 (73 FR 16436), EPA lowered the 8-hour ozone standard to 0.075 ppm (the 2008 8-hour ozone standard), and on May 21, 2012, EPA designated the South Coast as extreme nonattainment for the 2008 8-hour ozone standard (77 FR 30088). Today's proposed action relates to an attainment demonstration for the 1-hour ozone standard that relies heavily on the control strategy approved for attainment of the 1997 8-hour ozone standard. Attainment demonstrations for the more stringent 2008 8-hour ozone standard are not yet due.



2004, EPA designated and classified the South Coast area as a "severe-17" nonattainment area for the 1997 8-hour ozone standard but later granted CARB's request to reclassify the South Coast to "extreme" for the 1997 8-hour ozone standard.<sup>8</sup> The corresponding applicable attainment year for the 1997 8-hour ozone standard in the South Coast is 2023. In response to this designation, CARB submitted the 2007 South Coast AQMP and related 2007 State Strategy ("2007 AQMP"), and EPA took the following action:

- 2007 AQMP and 2007 State Strategy, as amended in 2009 and 2011 - EPA approved the attainment demonstration for the 1997 8-hour ozone standard at 77 FR 12674 (March 1, 2012), amended at 77 FR 70707 (November 27, 2012).

The 8-hour ozone control strategy in the 2007 AQMP builds upon the control strategy established under the previous 1-hour ozone plans. In connection with EPA's 2012 approval of the South Coast attainment demonstration for the 1997 8-hour ozone standard in the 2007 AQMP, EPA approved a number of commitments by CARB and the SCAQMD as part of the California SIP, including commitments to bring certain defined measures before their respective boards by certain dates, commitments to achieve certain aggregate emissions reductions by certain milestone years, and a commitment to achieve emissions reductions from

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<sup>8</sup> 69 FR 23858 (April 30, 2004); 75 FR 24409 (May 5, 2010).

development and implementation of advanced control technologies under CAA section 182(e)(5). Of particular relevance for this proposed action, EPA approved CARB's commitment to achieve aggregate emissions reductions (beyond those already accounted for in the baseline) of 52 tons per day (tpd) of VOC and 144 tpd of NO<sub>x</sub> in the South Coast by 2020, and CARB's commitment under section 182(e)(5) to achieve an additional 40 tpd of VOC and 241 tpd of NO<sub>x</sub> in the South Coast by 2023.

As noted above, the last South Coast 1-hour ozone attainment demonstration on which EPA took action was the one included in the 2003 AQMP. The 2003 AQMP revised the 1-hour ozone attainment demonstration approved as part of the 1997/1999 AQMP in light of new modeling results that showed that the approved strategy from the 1997/1999 AQMP would not provide for attainment of the 1-hour ozone standard by the 2010 attainment deadline.

EPA disapproved the revised 1-hour ozone attainment demonstration in the 2003 AQMP because a number of state control measures upon which the demonstration relied had been withdrawn from consideration. EPA's action on the 2003 AQMP was successfully challenged. In response to the court's decision<sup>9</sup> and in recognition of the fact that the South Coast had in fact

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<sup>9</sup> See *Association of Irrigated Residents v. EPA*, 632 F.3d 584 (9th Cir. 2011), reprinted as amended on January 27, 2012, 686 F.3d 668, further amended February 13, 2012.

failed to attain the 1-hour ozone standard by 2010, EPA issued a "SIP call" to California at 78 FR 889 (January 7, 2013) under CAA section 110(k)(5).<sup>10</sup> In our final SIP call, we explained that states remain obligated to adopt and implement an attainment demonstration plan for the 1-hour ozone standard, notwithstanding the revocation of the 1-hour ozone standard in 2005, under EPA's "anti-backsliding" regulations governing the transition from the 1-hour ozone standard to the 1997 8-hour ozone standard.<sup>11</sup> See 40 CFR 51.905(a)(1)(i).

Under our SIP call, California was required to submit a SIP revision that meets the requirements of CAA section 182(c)(2)(A)<sup>12</sup> and that demonstrates attainment of the 1-hour ozone standard as expeditiously as practicable but no later than five years from the effective date of the final SIP call, absent justification for a later date, not to exceed 10 years beyond the effective date of the final SIP call. In considering whether

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<sup>10</sup> Section 110(k)(5) provides, in relevant part, that: "Whenever [EPA] finds that the [SIP] for any area is substantially inadequate to attain or maintain the relevant [NAAQS], ... , or to otherwise comply with any requirement of this chapter, [EPA] shall require the State to revise the plan as necessary to correct such inadequacies."

<sup>11</sup> Our finding of substantial inadequacy under CAA section 110(k)(5) for failure to "adopt and implement" a 1-hour ozone attainment demonstration is not intended as a finding of nonimplementation under CAA section 179(a)(4).

<sup>12</sup> Under CAA section 182(c)(2)(A), the State must submit a revision to the SIP that includes a demonstration that the plan, as revised, will provide for attainment of the ozone NAAQS. The attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by EPA to be at least as effective. Section 182(c)(2)(A) applies within ozone nonattainment areas classified as "serious," but as a general matter, areas classified as "extreme" for the ozone nonattainment area, such as the South Coast, are subject to the requirements for lower-classified areas, such as those for "serious" areas, as well as those prescribed specifically for "extreme" areas.

a period longer than five years is warranted, EPA must consider the severity of the remaining nonattainment problem in the South Coast and the availability and feasibility of pollution control measures. See CAA section 172(a)(2).

The subject of today's proposed action is a SIP revision that was submitted in part to respond to EPA's SIP call for a revised attainment demonstration for the 1-hour ozone standard. As discussed later in this document, the submitted 1-hour ozone attainment demonstration relies heavily on the approved control strategy for the 1997 8-hour ozone standard that is discussed above in connection with EPA's approval of the 2007 AQMP.

## **II. EPA's Review of California's Submittal**

On December 7, 2012, SCAQMD adopted the *Final 2012 Air Quality Management Plan* ("2012 AQMP"), and later forwarded it to CARB for approval and submittal to EPA. The 2012 AQMP updates the approved 1997 8-hour ozone control strategy, includes attainment demonstrations for the 1-hour ozone standard and the 2006 PM<sub>2.5</sub> standard, and includes demonstrations intended to address the vehicle-miles-traveled emissions offset requirements of CAA section 182(d)(1)(A)<sup>13</sup> for the 1-hour ozone and 1997 8-hour ozone standards. With respect to the 1997 8-hour ozone

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<sup>13</sup> Under CAA section 182(d)(1)(A), states with severe or extreme ozone nonattainment areas must submit SIP revisions that identify and adopt specific transportation control strategies and transportation control measures to offset any growth in emissions from growth in vehicle miles traveled or numbers of vehicle trips in such areas.

standard, in adopting the 2012 AQMP, the SCAQMD indicated that, while the 2012 AQMP updates the approved 1997 8-hour ozone control strategy with new measures designed to reduce reliance on CAA section 182(e)(5) long-term (i.e., advanced control technologies) measures for VOC and NO<sub>x</sub> reductions, it is not intended as an update to other elements of the approved 8-hour ozone control plan.<sup>14</sup>

On January 25, 2013, CARB adopted the 2012 AQMP as a revision to the California SIP. On February 13, 2013, CARB submitted the 2012 AQMP to EPA along with the relevant CARB and SCAQMD board resolutions and other supporting material. In adopting the 2012 AQMP, CARB committed to develop, adopt, and submit contingency measures by 2019 if advanced control technology measures do not achieve planned reductions as required by CAA section 182(e)(5).<sup>15</sup> As noted above, the 2012 AQMP contains a number of SIP elements for a number of pollutants. Today, we are proposing action on the portions of the 2012 AQMP that update the approved 1997 8-hour ozone control strategy from the 2007 AQMP and that provide an attainment demonstration for the 1-hour ozone standard. Specifically, the relevant elements of the 2012 AQMP covered by our proposed action include:

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<sup>14</sup> See SCAQMD Governing Board Resolution No. 12-19 (December 7, 2012).

<sup>15</sup> See CARB Board Resolution No. 13-3 (January 25, 2013).

- CARB's resolution of adoption (Resolution 13-3);
- SCAQMD's resolution of adoption (Resolution 12-19);
- The ozone-related portions of chapter 4 of the 2012 AQMP ("Control Strategy and Implementation");
- Appendices IV-A ("District's Stationary Source Control Measures"), IV-B ("Proposed Section 182(e)(5) Implementation Measures"), and IV-C ("Regional Transportation Strategy and Control Measures"); and
- Appendix VII ("South Coast 2012 1-hour ozone attainment demonstration"), which includes 4 attachments, one of which includes a demonstration of reasonably available control measures (RACM).

In addition, EPA requested clarification of the commitments made by SCAQMD and CARB in connection with the 1-hour ozone attainment demonstration in the 2012 AQMP, and the two agencies responded with the following letters clarifying their respective commitments:

- Letter from Barry R. Wallerstein, D.Env, SCAQMD Executive Officer, to Jared Blumenfeld, Regional Administrator, EPA Region IX, May 1, 2014 ("Wallerstein Letter"); and
- Letter from Richard W. Corey, Executive Officer, CARB, to Jared Blumenfeld, Regional Administrator, EPA Region IX, May 2, 2014 ("Corey Letter").

For simplicity, in referring to the elements on which we are acting, we are using the term "2012 AQMP" even though we recognize that the 2012 AQMP includes other elements in addition to those covered in this proposed action.

The 1-hour ozone attainment demonstration includes base year and future year emissions inventory estimates, a control strategy and RACM demonstrations, and an attainment demonstration based on photochemical modeling. The control strategy for the revised 1-hour ozone demonstration relies on the same SCAQMD measures referred to by SCAQMD as new measures that update the approved 1997 8-hour ozone control strategy.

#### **A. CAA Procedural and Administrative Requirements for SIP**

##### **Submittals**

CAA sections 110(a)(1) and (2) and 110(l) require a state to provide reasonable public notice and opportunity for public hearing prior to the adoption and submittal of a SIP or SIP revision. To meet this requirement, every SIP submittal should include evidence that adequate public notice was given and a public hearing was held consistent with EPA's implementing regulations in 40 CFR 51.102.

The SCAQMD provided a public comment period and held a public hearing prior to its December 7, 2012 adoption of the 2012 AQMP. CARB provided the required public notice and opportunity for public comment prior to its January 25, 2013

public hearing on the 2012 AQMP. CARB's February 13, 2013 SIP submittal package includes notices of the SCAQMD and CARB public hearings, as evidence that all hearings were properly noticed. We therefore find that CARB's February 13, 2013 SIP revision submittal meets the procedural requirements of CAA sections 110(a) and 110(1).

#### **B. Attainment Demonstration Requirements**

CAA section 182(c)(2)(A) requires states with ozone nonattainment areas classified as serious, severe or extreme to submit plans that demonstrate attainment of the 1-hour ozone standard as expeditiously as practicable but no later than the outside date established in the CAA. The attainment demonstration should include technical analyses that locate and identify sources of emissions that are contributing to violations of the 1-hour ozone standard within the nonattainment area and adopted measures with schedules for implementation and other means and techniques necessary and appropriate for attainment. In order to determine whether the area has demonstrated attainment "as expeditiously as practicable," the area must provide a demonstration that all RACM are implemented. CAA 172(c)(1). In addition, the "... attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by the Administrator...to be at least as effective." CAA section 182(c)(2)(A).



## **1. Emissions Inventories**

### **a. Requirements for Emissions Inventories**

Attainment demonstrations rely upon emissions inventories that reflect different scenarios, including existing conditions ("base year") and future "baseline" conditions. The base year emission inventory must be a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant. Future baseline emissions inventories must reflect the most recent population, employment, travel and congestion estimates for the area. In this context, "baseline" emissions represent an estimate of the emissions that would occur in an area if no additional controls other than those already adopted are implemented.

### **b. Base Year and Future Baseline Emissions Inventories in the 2012 AQMP**

The 2012 AQMP includes a 2008 base year and a 2022 baseline emissions inventory for the South Coast 1-hour nonattainment area. Documentation for these inventories is found in appendix III ("Base and Future Year Emission Inventory"), and section 3 of appendix VII, of the 2012 AQMP. The 2008 base year ozone precursor inventory provides the basis for the control measure analysis and the attainment demonstration in the South Coast 2012 1-hour ozone attainment demonstration.

VOC and NO<sub>x</sub> emissions are grouped into two general categories, stationary sources and mobile sources. Stationary sources can be further divided into "point" and "area" sources. Point sources typically refer to permitted facilities and have one or more identified and fixed pieces of equipment and emissions points. Permitted facilities are required to report their emissions to the SCAQMD Annual Emissions Reporting Program. Area sources consist of widespread and numerous smaller emission sources, such as small permitted facilities, households, and road dust. The mobile sources category can be divided into two major subcategories, "on-road" and "off-road" mobile sources. On-road mobile sources include light-duty automobiles, light-, medium-, and heavy-duty trucks, and motorcycles. Off-road mobile sources include aircraft, locomotives, construction equipment, mobile equipment, and recreational vehicles.

The emissions inventories in the 2012 AQMP were developed using data provided by CARB, the California Department of Transportation, and SCAG. These agencies collect data (industry growth factors, socio-economic projections, travel activity levels, emission factors, emission speciation profiles, and emissions) and developing methodologies (for example, model and demographic forecast improvements) used to generate comprehensive emissions inventories. CARB maintains statewide

inventories in its California Emissions Inventory Development and Reporting System (CEIDARS) and California Emission Forecasting and Planning Inventory (CEFIS).<sup>16</sup>

Area source inventories are developed by CARB and the District for approximately 400 area source categories. For the 2008 base year inventory, a number of area source category emissions inventories used existing methodologies with updated activity data such as fuel or sales data. Both CARB and the District are continuously updating and improving emissions inventory methodologies; for this plan, five new categories were added to the inventory, other methodologies were refined, and some area source categories were expanded.<sup>17</sup>

CARB prepares on-road and most of the off-road inventories from its Emission FACTor (EMFAC) 2011 model and 2011 In-Use Fleet Off-Road models.<sup>18</sup> Caltrans provides information on highway projects. SCAG uses these data to estimate and project vehicle miles travelled (VMT) and speeds. SCAG also provides socioeconomic projections and projections of transportation activity data for use in on-road inventory development.

Table 1 depicts a summary of the 2008 VOC and NO<sub>x</sub> emissions inventory for the South Coast 1-hour ozone nonattainment area as

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<sup>16</sup> See 2012 AQMP, Appendix III.

<sup>17</sup> See 2012 AQMP, Appendix III, pages III-1-5, III-1-11, and III-1-14-15.

<sup>18</sup> EMFAC 2011 was approved by EPA for use in SIPs on March 6, 2013 (see 78 FR 14533).

presented in the 2012 AQMP. Emissions estimates in table 1 are broken down by the major source categories described above. Based on the inventory for 2008, stationary and area sources currently account for 40 percent of VOC emissions, and 10 percent of the NO<sub>x</sub> emissions, in the South Coast while mobile sources account for 60 percent of the VOC emissions and 90 percent of the NO<sub>x</sub> emissions.

**Table 1. Summary of South Coast Air Basin 2008 VOC and NO<sub>x</sub> Emissions Inventory (summer planning inventory, tpd)**

Source Category	VOC	NO <sub>x</sub>
Fuel Combustion	14	41
Waste Disposal	12	2
Cleaning and Surface Coatings	43	0
Petroleum Production and Marketing	41	0
Industrial Processes	19	0
Solvent Processes	126	0
Miscellaneous Processes	<u>9</u>	<u>44</u>
Subtotal - Stationary and Area Sources	264	87
On-road Vehicles	213	426
Off-road Vehicles	<u>162</u>	<u>208</u>
Subtotal - Mobile Sources	<u>375</u>	<u>634</u>
Total - South Coast	639	721

Source: 2012 AQMP, appendix VII, table VII-3-1.

Table 2 presents a summary of future baseline emissions in the South Coast in 2022. In this instance, future baseline emissions reflect SCAQMD regulations adopted as of June 2012 and

CARB rules adopted by August 2011<sup>19</sup> as well as the latest forecasts of growth in population, employment, and vehicle travel. Generally, EPA will approve a State plan that takes emissions reduction credit for a control measure only where EPA has approved the measure as part of the SIP, or in the case of certain on-road and nonroad (or "off-road") measures, where EPA has issued the related waiver of preemption or authorization under CAA section 209(b) or section 209(e). Thus, to take credit for the emissions reductions from newly-adopted or amended SCAQMD rules for stationary sources, the related rules must be approved by EPA into the SIP.

Table 3 lists the SCAQMD regulations for which specific emissions reduction credit was taken in the future baseline emissions estimates for the 2012 AQMP. See 2012 AQMP, appendix III, table III-2-2B. As shown in table 3, EPA has approved all of these regulations into the SIP. Most of these regulations have been amended a number of times by SCAQMD, and, with three exceptions, EPA has approved the most recently amended versions of the regulations into the SIP. As to the three exceptions (Rules 1146, 1146.1, and 1147), EPA anticipates taking final action on the most recently amended versions of the regulations prior to taking final action on the revised 1-hour ozone attainment demonstration.

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<sup>19</sup> See 2012 AQMP, Appendix III, page III-1-1.

With respect to mobile sources, we have placed a table in the docket that shows, among other things, the CARB regulations adopted through August 2011. In general, CARB regulations adopted through August 2011 and included in the future baseline are approved into the SIP, waived or authorized and thus emissions reduction credit for them in the future baseline is warranted. For example, EPA approved CARB's Truck and Bus Rule at 77 FR 20308 (April 4, 2012); EPA authorized CARB's Cleaner In-Use Off-Road Equipment Regulation at 78 FR 58090 (September 20, 2013); EPA authorized CARB's At-Berth Regulation, which reduces emissions from diesel auxiliary engines on contained ships, passenger ships and refrigerated cargo ships while berthing at a California port, at 76 FR 77515 (December 13, 2011); and EPA waived preemption for CARB's Truck Idling Regulation at 77 FR 9239 (February 16, 2012). EPA is anticipating final action on CARB's amended Consumer Products Regulation prior to taking final action on the revised 1-hour ozone attainment demonstration.

**Table 2. Summary of South Coast Air Basin 2022 VOC and NO<sub>x</sub> Emissions Inventory (summer planning inventory, tpd)**

Source Category	VOC	NO <sub>x</sub>
Fuel Combustion	14	28
Waste Disposal	14	2
Cleaning and Surface Coatings	55	0

Petroleum Production and Marketing	36	0
Industrial Processes	17	0
Solvent Processes	112	0
Miscellaneous Processes	<u>9</u>	<u>40</u>
Subtotal - Stationary and Area Sources	258	70
On-road Vehicles	73	131
Off-road Vehicles	<u>109</u>	<u>137</u>
Subtotal - Mobile Sources	<u>182</u>	<u>267</u>
Total - South Coast	440	337

Source: Interpolated for year 2022 from 2012 AQMP, Appendix III, tables B-4 and B-5.

Emissions in table 2 are also broken down by the major source categories described above. A comparison between future baseline emissions in table 2 with the corresponding base year (2008) emissions in table 1 shows that, assuming current controls, there will be only modest changes in emissions from stationary and area sources but substantial decreases in emissions from mobile sources. However, even with the substantial decrease in mobile sources emissions relative to 2008, mobile sources will still account for 40 percent of the VOC, and 80 percent of the NO<sub>x</sub>, basin-wide inventory in 2022.

**Table 3. District Measures Included in the Future Year Baseline Emissions**

Rule	Description	Date of SCAQMD Adoption or Most Recent Amendment	EPA Approval (unless otherwise noted)
Rule 1110.2	Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines	February 1, 2008	74 FR 18995, April 27, 2009

Rule 1111	Reduction of NO <sub>x</sub> Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces	November 6, 2009	75 FR 46845, August 4, 2010
Rule 1113	Architectural Coatings	June 3, 2011	78 FR 18244, March 26, 2013
Rule 1118	Control of Emissions from Refinery Flares	November 4, 2005	72 FR 49196, August 28, 2007
Rule 1121	Control of Nitrogen Oxides from Residential-Type Natural-Gas-fired Water Heaters	September 3, 2004	74 FR 20880, May 6, 2009
Rule 1133.2	Emissions Reductions from Co-Composting Operations	January 10, 2003	69 FR 43518, July 21, 2004
Rule 1133.3	Emission Reductions from Greenwaste Composting Operations	July 8, 2011	77 FR 71129, November 29, 2012
Rule 1143	Consumer Paint Thinners and Multipurpose Solvents	December 3, 2010	76 FR 70888, November 16, 2011
Rule 1144	Metalworking Fluids and Direct Contact Lubricants	July 9, 2010	76 FR 70888, November 16, 2011
Rule 1146	Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators and Process Heaters	September 5, 2008	Proposed limited approval / limited disapproval at 76 FR 40303 (July 8, 2011)
Rule 1146.1	Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators and Process Heaters	September 5, 2008	Proposed limited approval / limited disapproval at 76 FR 40303 (July 8, 2011)
Rule 1146.2	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters	May 5, 2006	73 FR 74027, December 5, 2008
Rule 1147	NO <sub>x</sub> Reductions from Miscellaneous Sources	September 9, 2011	December 5, 2008 version of rule approved at 75 FR 46845, August 4, 2010
Rule 1149	Storage Tank and Pipeline Cleaning and Degassing	May 2, 2008	74 FR 67821, December 21, 2009
Rule 1151	Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations	December 2, 2005	78 FR 58959, September 24, 2013
Rule 1177	Liquefied Petroleum Gas Transfer and Dispensing	June 1, 2012	79 FR 364, January 3, 2014



Rule 1178	Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities	April 7, 2006	72 FR 49196, August 28, 2007
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We have reviewed the emissions inventories developed for the 2012 South Coast 1-hour ozone attainment demonstration, and the inventory methodologies used by the SCAQMD for consistency with CAA requirements and EPA's guidance. We find that the 2008 base year inventory is a comprehensive, accurate, and current inventory of ozone precursor emissions in the South Coast 1-hour ozone nonattainment area, and that 2008 is an appropriate base year for the revised 1-hour ozone attainment demonstration, and that the future baseline emissions projections for 2022 reflect appropriate emissions calculation methods and the latest planning assumptions. Therefore, we find the base year and future baseline emissions inventories to be acceptable for the purposes of developing a 1-hour ozone attainment demonstration.

## **2. South Coast 1-Hour Ozone Plan Control Strategy**

### **a. Requirements for Control Strategies and RACM Demonstrations**

EPA's SIP call required California to submit a SIP revision that meets the requirements of CAA section 182(c)(2)(A), which requires a demonstration that the SIP, as revised, will provide for attainment of the 1-hour ozone standard by the applicable attainment date. 78 FR 889, at 890 (January 7, 2013). In this case, the applicable attainment date is prescribed by CAA

section 172(a)(2)(A), which is the date by which attainment can be achieved as expeditiously as practicable, but no later than February 6, 2018 (five years from the effective date of the SIP call). However, EPA may extend the attainment date to the extent EPA determines appropriate, for a period of no greater than February 6, 2023 (ten years from the effective date of the SIP call), considering the severity of nonattainment and the availability and feasibility of pollution control measures.

The 2012 AQMP includes a demonstration of attainment for the 1-hour ozone standard by December 31, 2022 and thus relies on an extension beyond the five-year deadline under CAA section 172(a)(2)(A). In section II.B.3 of this document, we provide our rationale for proposing approval of the extension in the attainment date to December 31, 2022. Our proposed approval of December 31, 2022 as the applicable attainment date depends in part upon California's showing that the 2012 AQMP provides for implementation of all RACM as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology (RACT)). See CAA section 172(c)(1).

In addition to RACM, to meet the requirements of CAA section 182(c)(2)(A), a 1-hour ozone attainment demonstration must include other "enforceable emission limitations, and such

other control measures, means or techniques \* \* \*, as well as schedules and timetables for compliance, as may be necessary or appropriate to provide for attainment \* \* \* by the applicable attainment date \* \* \*." CAA section 172(c)(6). The CAA allows ozone nonattainment areas classified as "extreme," such as the South Coast, to include "provisions \* \* \* which anticipate development of new control techniques or improvement of existing control technologies, \* \* \* if the State demonstrates \* \* \* that —(A) such provisions are not necessary to achieve the incremental emission reductions required during the first 10 years after the date of the enactment of the Clean Air Act Amendments of 1990; and (B) the State has submitted enforceable commitments to develop and adopt contingency measures to be implemented \* \* \* if the anticipated technologies do not achieve planned reductions." CAA section 182(e)(5). The measures included in the plan that describe the mechanisms for developing and implementing new control techniques or improvements in existing control technologies and achieving the planned emissions reductions are referred to as "new technology" measures.

The control strategy for the 1-hour ozone attainment demonstration in the 2012 AQMP relies on all three types of strategies to reduce basin-wide emissions to the extent necessary to demonstrate attainment of the 1-hour ozone standard

(i.e., reduce emissions to 410 tpd of VOC and 150 tpd of NO<sub>x</sub>): implementation of RACM; other control measures, means or techniques; and new technology measures. In this case, the phrase, "other control measures, means, or techniques" refers to the commitments made by the SCAQMD and CARB to bring certain regulatory initiatives to their respective boards on a certain schedule and to meet certain aggregate emissions reductions in certain years. The overall control strategy and emissions reductions from the various components is presented in table 4.

**Table 4. Summary of South Coast's 1-hour Ozone Attainment Demonstration Control Strategy (Summer Planning Inventory (tpd))**

<b>Emissions Scenario</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>
Year 2008 Base Year <sup>a</sup>	<b>593</b>	<b>754</b>
Emission Reductions from Baseline Measures	153	419
Year 2022 Baseline	<b>440</b>	<b>335</b>
SCAQMD's New Aggregate Emissions Reduction Commitment	6	11
CARB's Existing Aggregate Emissions Reduction Commitment	7	24
New Technology Measures	17	150
<b>Year 2022 With Fulfillment of Commitments</b>	<b>410</b>	<b>150</b>

<sup>a</sup> The modeling runs that were used to demonstrate attainment of the 1-hour ozone standard in the 2012 AQMP were based on the base year (2008) summer planning inventories (see table 1 above) with adjustments made for weekly and daily temperature variations. See 2010 AQMP, appendix VII, page VII-51.

With respect to commitments, the 1-hour ozone attainment demonstration in the 2012 AQMP includes certain new commitments adopted by SCAQMD and relies on existing commitments by CARB that were approved by EPA through approval of the attainment demonstration for the 1997 8-hour ozone standard in the 2007 AQMP. The "new technology" provision in the 2012 AQMP updates

the corresponding provision in the 2007 AQMP by proving greater specificity in the description of the actions that are or will be taken to achieve emissions reductions from development or deployment of advanced control technologies or techniques. The focus of the "new technology" provisions is the mobile source category of emissions in light of the extent to which such sources contribute to the overall inventory of ozone precursors.

**b. 2012 AQMP RACM Demonstration**

CAA section 172(c)(1) requires that each attainment plan "provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology), and shall provide for attainment of the national primary ambient air quality standards."

EPA has previously provided guidance interpreting the RACM requirement in the General Preamble at 13560<sup>20</sup> and in a memorandum entitled "Guidance on Reasonably Available Control Measures (RACM) Requirements and Attainment Demonstration Submissions for the Ozone NAAQS," John Seitz, November 30, 1999. (Seitz memo). In summary, EPA guidance provides that to address

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<sup>20</sup> The "General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," published at 57 FR 13498 on April 16, 1992, describes EPA's preliminary view on how we would interpret various SIP planning provisions in title I of the CAA as amended in 1990, including those planning provisions applicable to the 1-hour ozone standard.

the requirement to adopt all RACM, states should consider all potentially reasonable control measures for source categories in the nonattainment area to determine whether they are reasonably available for implementation in that area and whether they would, if implemented individually or collectively, advance the area's attainment date by one year or more. See Seitz memo and General Preamble at 13560; see also "State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas," 44 FR 20372 (April 4, 1979) and Memorandum dated December 14, 2000, from John S. Seitz, Director, Office of Air Quality Planning and Standards, "Additional Submission on RACM from States with Severe One-Hour Ozone Nonattainment Area SIPs." In the following paragraphs, we discuss each element of the control strategy and provide a rationale for why we find it acceptable.

First, as noted above, EPA approved the 2007 AQMP for the 1997 8-hour ozone NAAQS in 2012. As part of that action, EPA approved the related RACM demonstration. See 77 FR 12674, at 12694 (March 1, 2012). In so doing, we approved the individual stationary-source RACM demonstration from SCAQMD, the transportation-related RACM demonstration from SCAG, and the mobile and area source RACM demonstration from CARB. See 76 FR 57872, at 57877-57881 (September 16, 2011).

To update the RACM demonstration for the 2012 AQMP, the SCAQMD followed a similar process as it had used for the 2007 AQMP. That is, the SCAQMD conducted a process to identify RACM for the South Coast that involved public meetings to solicit input, evaluation of EPA's suggested RACM, and evaluation of other air agencies' regulations. See 2012 AQMP, appendix VII, attachment 4. As part of this process, the SCAQMD evaluated measures implemented in other nonattainment areas based on the severity of the nonattainment situation as well as attainment dates (including the San Joaquin Valley, the San Francisco Bay Area, Ventura, Dallas-Fort Worth, the New York Metro area, and the Houston-Galveston area) and measures identified by the Lake Michigan Air Directors Consortium (LADCO). The SCAQMD also held meetings with CARB, technical experts, local government representatives, and the public during development of the 2012 AQMP, and sponsored an air quality technology symposium in September of 2011, which generated additional potential control measures. In addition, the SCAQMD reevaluated existing SIP-approved SCAQMD rules and regulations.

From the set of identified potential controls, the SCAQMD then screened the identified measures and rejected those that would not individually or collectively advance attainment in the area, had already been adopted as rules, or were in the process of being adopted. The remaining measures were evaluated taking

into account baseline inventories, available control technologies, and potential emission reductions as well as whether the measure could be implemented on a schedule that would advance attainment of the 1-hour ozone standard by at least a year, assuming a 2022 attainment deadline. In addition, to capture all improvements in innovative control technologies and identify areas for improvement in its regulations, SCAQMD staff reevaluated all the SCAQMD's source-specific rules and regulations and compared these requirements to more than 100 rules that had recently been adopted in four other California air districts (San Joaquin Valley, Sacramento, Ventura, and San Francisco Bay Area).<sup>21</sup>

Based on its RACM analysis summarized above, SCAQMD concluded that, in general, its existing rules and regulations are equivalent to, or more stringent than, other Districts' rules. In the few areas where this was not the case, SCAQMD staff have developed one or more control measures for inclusion in the 2012 AQMP. In adopting the 2012 AQMP, the SCAQMD committed to develop, adopt, submit and implement 15 new measures, including measures at least as stringent as those identified in other California districts' SIPs, and several innovative measures. Table 5 lists these measures along with the related adoption and implementation date, and estimated

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<sup>21</sup> 2012 AQMP, appendix VII, attachment 4, page VII-10.



emissions reductions. For a detailed description of the measures to which the SCAQMD has committed, please see appendix VI-A of the 2012 AQMP.

**Table 5. District Control Measures in 2012 AQMP 1-Hour Ozone Attainment Demonstration**

NUMBER AND TITLE	ADOPTION	IMPLEMENTATION PERIOD	REDUCTION (tons per day (tpd)) by 2023	
			VOC	NO <sub>x</sub>
CTS-01 - Further VOC Reductions from Architectural Coatings (Rule 1113)	2015 - 2016	2018 - 2020	2-4	
CTS-02 - Further Emission Reduction from Miscellaneous Coatings, Adhesives, Solvents and Lubricants	2013 - 2016	2015 - 2018	1-2	
CTS-03 - Further VOC Reductions from Mold Release Products	2014	2016	0.8-2	
CMB-01 - Further NO <sub>x</sub> Reductions from RECLAIM	2015	2020		3-5
CMB-02 - NO <sub>x</sub> Reductions from Biogas Flares	2015	Beginning 2017		TBD
CMB-03 - Reductions from Commercial Space Heating	Phase I - 2014 (Tech Assessment), Phase II - 2016	Beginning 2018		0.18
FUG-01 - VOC Reductions from Vacuum Trucks	2014	2016	1	
FUG-02 - Emission Reduction from LPG Transfer and Dispensing - Phase II	2015	2017	1-2	
FUG-03 - Further Reductions from Fugitive VOC Emissions	2015 - 2016	2017 - 2018	1-2	
MCS-01 - Application of All Feasible Measures	Ongoing	Ongoing	TBD	TBD
MCS-02 - Further Emission Reductions from Green waste Processing (Chipping and Grinding Operations not associated with composting)	2015	2016	1	
MCS-03 - Improved Start-up, Shutdown and Turnaround Procedures	Phase I - 2012 (Tech Assessment), Phase	Phase I - 2013 (Tech Assessment), Phase II - TBD	TBD	TBD

	II - TBD			
INC-01 - Economic Incentive Programs to Adopt Zero and Near-Zero Technologies	2014	Within 12 months after funding availability		TBD
INC-02 - Expedited Permitting and CEQA Preparation Facilitating the Manufacturing of Zero and Near-Zero Technologies	2014-2015	Beginning 2015	N/A	N/A
EDU-01 - Further Criteria Pollutant Reductions from Education, Outreach and Incentives	Ongoing	Ongoing	N/A	N/A

Source: 2012 AQMP, table 4-4. Note: TBD = to be determined once the specific inventory and control approach for the measure are identified. N/A = not applicable given nature of the measure.

More specifically, the SCAQMD has committed to develop, adopt, submit and implement the 15 new measures listed in table 5 to achieve, in aggregate, emission reductions of 5.8 tpd of VOC and 10.7 tpd of NO<sub>x</sub> by January 1, 2022 unless these measures or a portion thereof are found infeasible and substitute measures that can achieve equivalent reductions in the same implementation timeframes are adopted.<sup>22</sup> The 2012 AQMP describes a process for public review of findings of feasibility and the related measure substitution.

As to the few remaining measures that the SCAQMD rejected from its RACM analysis, the SCAQMD determined that these measures would not advance the attainment date due to the insignificant or unquantifiable emissions reductions they would potentially generate. See 2012 AQMP, appendix VII, attachment 2, page VII-10. Based on our review of the SCAQMD's latest RACM

<sup>22</sup> See 2012 AQMP, pages 4-41 through 4-46, and Wallerstein Letter.

review process and the SCAQMD's proposed commitment to new measures (listed in table 5), we find that the 2012 AQMP demonstrates RACM for stationary sources in the South Coast.

With respect to transportation sources, SCAG's RACM analysis focused on transportation control measures (TCMs). TCMs are, in general, measures designed to reduce emissions from on-road motor vehicles through reductions in vehicle miles traveled or traffic congestion. SCAG's analysis is described in appendix VII, pages VII-20 to VII-23 of the 2012 AQMP. The TCMs in the 2012 AQMP are derived from TCM projects in the 2012-2035 SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).<sup>23</sup> SCAG's evaluation, described beginning on page VII-20 of appendix VII of the 2012 AQMP, resulted in extensive local government commitments to implement programs to reduce auto travel and improve traffic flow. Attachment 2 to appendix VIII ("Vehicle Miles Traveled Emissions Offset Demonstration") to the 2012 AQMP contains the list of TCMs under development and newly scheduled TCMs. See also 2012 AQMP, appendix IV-C.

In so doing, SCAG evaluated a wide variety of TCMs, including those measures listed in CAA section 108(f) and relevant measures adopted in other nonattainment areas in the

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<sup>23</sup> The Sustainable Communities Strategy is new to this RTP cycle and is required by California Senate Bill 375. While the focus of the SCS is greenhouse gases, concurrent criteria pollutant reductions occur. The emissions benefits associated with the RTP/SCS are reflected in the projected baseline emissions inventories in the 2012 AQMP. 2012 AQMP, appendix VII, page VII-23.

country, and determined that there was no combinations of reasonable measures that would advance attainment of the 1-hour ozone standard in the South Coast. See 2012 AQMP, appendix VII and appendix IV-C. Based on our review of appendix IV-C of the 2012 AQMP, we agree with the conclusion in the 2012 AQMP that the TCMs being implemented in the South Coast are inclusive of all TCM RACM for the area.

As to the mobile source component of the RACM demonstration, in 2007, CARB adopted the "California Air Resources Board's Proposed State Strategy for California's 2007 State Implementation Plan" ("2007 State Strategy") through which CARB identified and committed to propose new defined measures for on-road and off-road sources and the fuels that power them.

Given the need for significant emissions reductions in California nonattainment areas, CARB has been a leader in the development and adoption of stringent mobile source control measures nationwide and has unique authority under CAA section 209 (subject to a waiver or authorization by EPA) to adopt and implement new emission standards for many categories of on-road vehicles and engines and new and in-use off-road vehicles and engines. We have also noted that many if not most of these particular measures are being proposed for adoption for the first time anywhere in the nation. Like the 2007 AQMP, the 2012 AQMP relies on the defined measures adopted by CARB in the 2007

State Strategy approved by EPA in 2012, and we agree with the 2012 AQMP's conclusion that CARB's mobile source program, approved as RACM in connection with the 2007 AQMP, continues to be RACM as it expands and further reduces emissions.

Therefore, for the reasons discussed above, we conclude that the 2012 AQMP provides for RACM for ozone precursor emissions from stationary, transportation, and mobile sources in the South Coast.

#### **c. 2012 AQMP Aggregate Emissions Reductions Commitments**

As described in the previous section of this document, through adoption of the 2012 AQMP, the SCAQMD has committed to achieve specific aggregate emissions reductions from VOC and NO<sub>x</sub> sources in the South Coast area. Specifically, the SCAQMD has committed to develop, adopt, submit and implement measures that will achieve the following additional emissions reductions by January 1, 2022: 5.8 tpd of VOC and 10.7 tpd of NO<sub>x</sub>. The SCAQMD expects to meet its emissions reductions commitments for VOC and NO<sub>x</sub> through implementation of the 15 measures in table 5, and through implementation of the Surplus Off-road Option for NO<sub>x</sub> (SOON) provision for construction/industrial equipment, but reserves the right to substitute measures as described in the previous section of this document.<sup>24</sup> CARB has made no new

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<sup>24</sup> SCAQMD estimates that extension of the SOON provision will achieve 7.5 tpd of NO<sub>x</sub> reductions by 2022.

aggregate emissions reduction commitment for the purposes of demonstrating attainment of the 1-hour ozone standard by December 31, 2022 in the South Coast, but the 2012 AQMP estimates that CARB's existing, EPA-approved aggregate emissions reduction commitment under the 2007 AQMP will provide 7 tpd of VOC and 24 tpd of NO<sub>x</sub> reductions by 2022. Considered together, the SCAQMD's new aggregate emissions reductions commitment and CARB's existing aggregate emissions reductions commitment under the 2007 AQMP amount to 13 tpd of VOC and 35 tpd of NO<sub>x</sub> for the purposes of 1-hour attainment in the South Coast by December 31, 2022.

EPA believes that, with respect to the 2012 AQMP 1-hour ozone attainment demonstration, circumstances warrant the consideration of enforceable commitments as part of the attainment demonstration for the South Coast. As shown in table 4 above, the majority of the VOC reductions and a substantial portion of NO<sub>x</sub> emissions reductions needed to demonstrate attainment in the South Coast come from SCAQMD regulations that were adopted prior to June 2012, and CARB regulations that were adopted prior to August 2011, i.e., baseline measures that have been or will be approved into the SIP (or issued waivers or authorizations) prior to a final approval of the attainment demonstration. As a result of these State and District efforts, most sources in the South Coast

nonattainment area are currently subject to stringent rules adopted and approved by EPA (or for which EPA has issued waivers or authorization in the case of CARB regulations) prior to the development of the 2012 AQMP, leaving few opportunities (and generally more technologically and economically challenging ones) to further reduce emissions.

In the 2012 AQMP, the SCAQMD identified potential control measures that could provide many of the additional emissions reductions needed for attainment. See 2012 1-hour ozone attainment demonstration, appendix VII, section 4. However, the timeline needed to develop, adopt, and implement these measures went beyond the February 2013 submittal date of the South Coast 2012 1-hour ozone attainment demonstration. These circumstances warrant the SCAQMD's and CARB's reliance on enforceable commitments as part of the attainment demonstration in the South Coast 2012 1-hour ozone attainment demonstration.

Given the State's demonstrated need for reliance on enforceable commitments, we now consider the three factors EPA uses to determine whether the use of enforceable commitments in lieu of adopted measures to meet a CAA planning requirements is approvable: (1) does the commitment address a limited portion of the statutorily-required program; (2) is the state capable of fulfilling its commitment; and (3) is the commitment for a reasonable and appropriate period of time.

For the first factor, we look to see if the commitment addresses a limited portion of a statutory requirement, such as the amount of emissions reductions needed to demonstrate attainment in a nonattainment area. For this calculation, reductions assigned to the new technology provision (CAA section 182(e)(5)) are not counted as commitments.<sup>25</sup>

As shown in table 4 above, the remaining portions of the emission reductions needed to demonstrate attainment of the 1-hour ozone standard in the South Coast nonattainment area (*i.e.*, of the State's total enforceable commitments), after accounting for baseline measures and emissions reduction commitments assigned to CAA section 182(e)(5) measures, amount to 13 tpd VOC and 35 tpd NO<sub>x</sub>. When compared to the total reductions needed to demonstrate attainment (not including the CAA section 182(e)(5) reductions in the attainment demonstration), the remaining portion of the enforceable commitments represents approximately 7 percent of the needed VOC reductions and approximately 6 percent of the needed NO<sub>x</sub> reductions. These percentage reductions are consistent with other SIPs for which EPA has approved

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<sup>25</sup> CAA section 182(e)(5) specifically allows EPA to approve an attainment demonstration that relies on reductions from new technologies. This provision is separate from the requirement in CAA section 172(c)(6) for enforceable emissions limitations under which enforceable commitments are considered. As a result, reductions attributed in the attainment demonstration to new technologies are not considered part of the State's enforceable commitments for purposes of determining the percentage of reductions needed for attainment that remain as commitments.



enforceable commitments. See our approval of the SJV PM<sub>10</sub> Plan at 69 FR 30005 (May 26, 2004), the SJV 1-hour ozone plan at 75 FR 10420 (March 8, 2010), the Houston-Galveston 1-hour ozone plan at 66 FR 57160 (November 14, 2001), approval of the SJV 2007 PM<sub>2.5</sub> SIP at 76 FR 41338 (November 9, 2011), and approval of the South Coast PM<sub>2.5</sub> SIP at 76 FR 41562 (November 9, 2011). We believe the State's commitment meets the first factor because it addresses a limited proportion of the required emission reductions.

For the second factor, we consider whether the SCAQMD and CARB are capable of fulfilling their commitments. The 2012 AQMP includes a specific list of regulatory initiatives from which emissions reductions are estimated to fulfill that agency's aggregate emissions reduction commitment. See table VII-4-2, and control measure OFFRD-01 (i.e., extension of the SOON provision) in table VII-4-4 of appendix VII of the 2012 AQMP. With respect to CARB's existing aggregate commitment from the 2007 AQMP, table VII-4-1 of the 2012 AQMP lists the types of measures included in the 2007 AQMP that the State of California could implement to meet CARB's existing 2020 aggregate commitment and thereby provide the planned emissions reductions for 1-hour ozone attainment purposes in 2022. Given the State's and SCAQMD's efforts to date to reduce emissions and the proposed stationary and mobile source strategies found in the 2012 AQMP,

we believe that the State and SCAQMD are capable of fulfilling their aggregate emissions reductions commitments.

For the third and last factor, we consider whether the commitment is for a reasonable and appropriate period of time. First, we note SCAQMD's commitment is to achieve the specified aggregate emission reductions by January 1, 2022 (see Wallerstein Letter), for the purpose of providing for attainment of the 1-hour ozone standard by December 31, 2022, an attainment date that we are proposing to approve herein. Second, to meet the aggregate reduction commitment by January 1, 2022, SCAQMD is relying on emissions reductions from the SOON program. Reductions from the SOON program involve accelerating fleet turnover of off-road diesel engines through equipment replacement and engine repowers that in turn rely on available funds. The SCAQMD's expectation of emissions reductions from the SOON program by January 1, 2022 is based on the reasonable assumption of continued funding at current levels to achieve similar annual reductions in the emissions as have been achieved over the past four years. As such, we find that SCAQMD's aggregate emissions reduction commitment is for a reasonable and appropriate period of time. CARB's emissions reduction commitment from the 2007 AQMP is for year 2020, and so long as the commitment is fulfilled by January 1, 2022, it will provide the necessary reductions to attain the 1-hour ozone standard in

the South Coast by December 31, 2022. Thus, SCAQMD's new commitment and CARB's existing commitment are for a reasonable and appropriate period of time.

**d. CAA Section 182(e)(5) New or Improved Technology Measures**

For ozone nonattainment areas classified as extreme, the CAA recognizes that an attainment demonstration may need to rely to a certain extent on new or evolving technologies (referred to herein as "new technology" measures), given the relatively long time between developing the initial plan and attaining the standard and the degree of emissions reductions needed to attain. To address these needs, CAA section 182(e)(5) authorizes EPA to approve provisions in an extreme area plan which "anticipate development of new control techniques or improvement of existing control technologies," and to approve an attainment demonstration based on such provisions, if the State demonstrates that: (1) such provisions are not necessary to achieve the incremental emission reductions required during the first 10 years after November 15, 1990; and (2) the State has submitted enforceable commitments to develop and adopt contingency measures to be implemented if the anticipated technologies do not achieve the planned reductions. CAA 182(e)(5). The State must submit these contingency measures to EPA no later than three years before proposed implementation of these long-term measures, and the contingency measures must be

"adequate to produce emissions reductions sufficient, in conjunction with other approved plan provisions, to achieve the periodic emissions reductions required by [CAA sections 182(b)(1) or (c)(2)] and attainment by the applicable dates." *Id.*

The General Preamble further provides that the new technology measures contemplated by section 182(e)(5) may include those that anticipate future technological developments as well as those that require complex analyses, decision making and coordination among a number of government agencies. See General Preamble at 13524. An attainment demonstration that relies on long-term new technology measures under section 182(e)(5) must identify any such measures and contain a schedule outlining the steps leading to final development and adoption of the measures. *Id.*

SCAQMD and CARB have demonstrated a clear need for emissions reductions from new and improved control technologies to reduce air pollution in the South Coast. As shown in table 4, above, baseline measures, and enforceable commitments provide the majority, but not all, of the emissions reductions needed by 2022 to attain the emissions target for 1-hour ozone attainment in the South Coast of 410 tpd of VOC and 150 tpd of NO<sub>x</sub>.

To cover the difference, which amounts to 17 tpd of VOC and 150 tpd of NO<sub>x</sub>, the 2012 AQMP includes 10 measures to reduce

mobile source emissions for 1-hour ozone and 1997 8-hour ozone planning purposes and seven additional measures to accelerate the development and deployment of near-zero and zero-emission technology for goods movement related sources and off-road equipment to achieve additional emissions reductions over the longer-term for 2008 8-hour ozone planning purposes as well. These "new technology" measures are intended to provide the emissions reductions necessary to attain the 1-hour ozone standard and also represent the updated "new technology" provisions for attainment of the 1997 8-hour ozone standard in the South Coast. The "new technology" measures are identical for both the 1-hour ozone and 1997 8-hour ozone standards. The differences in the new technology provisions between the 1-hour ozone and 1997 8-hour ozone attainment demonstrations lie in the extent to which the attainment demonstrations rely on such measures, and the timing. The emissions reductions that are needed from new technology measures to demonstrate attainment of the 1-hour ozone standard in the South Coast are 17 tpd of VOC and 150 tpd of NO<sub>x</sub> by January 1, 2022. The corresponding emissions reductions and timing from new technology measures for 1997 8-hour ozone attainment purposes is 40 tpd of VOC and 241 tpd of NO<sub>x</sub> by January 1, 2023.

Table 6 below lists the 2012 AQMP's new technology measures along with a brief summary of each measure. See 2012 AQMP,

appendix IV-B for a detailed description of the measures. In support of these measures, CARB adopted a commitment to “develop, adopt, and submit contingency measures by 2019 if advanced technology measures do not achieve planned reductions as required by section 182(e)(5)(B).” CARB Resolution 13-3, page 9.

**Table 6. SCAQMD and CARB New Technology Measures in 2012 AQMP**

<b>2012 AQMP Measure Identifier</b>	<b>Title</b>	<b>Description</b>
ONRD-01	Accelerated Penetration of Partial Zero-Emission and Zero Emission Vehicles	This measure continues implementation of CARB’s Clean Vehicle Rebate Project (CVRP) through 2023 with a minimum number of 1,000 vehicles per year to be incentivized through the CVRP, which provides individual vehicle incentives of up to certain amounts (e.g., \$2,500 for full zero-emission vehicles) for clean vehicles.
ONRD-02	Accelerated Retirement of Older Light-Duty and Medium Duty Vehicles	This measure calls for retirement of, at a minimum, 2,000 light and medium-duty vehicles per year to 2023, and gives first priority to pre-1992 model year vehicles identified as high emitter and that are off-cycle to California’s Smog Check Program. Incentives are up to \$2,500 per vehicle which could include a replacement voucher under CARB’s Enhanced Fleet Modernization Program.
ONRD-03	Accelerated Penetration of Partial Zero-Emission and Zero Emission Light-Heavy- and Medium-Heavy-Duty Vehicles	This measure seeks additional emissions reductions through the early introduction of electric hybrid vehicles and continues the state hybrid truck and bus voucher incentive project (HVIP). Incentives of up to \$25,000 per vehicle are part of this measure. The measure’s goal is to fund 1,000 hybrid and zero-emission vehicles each year to 2023.

ONRD-04	Accelerated Retirement of Older On-Road Heavy-Duty Vehicles	This measure seeks additional emissions reductions from older, pre-2010 heavy-duty vehicles beyond the emission reductions targeted in CARB's Truck and Bus Regulation. A significant number of heavy-duty trucks have been replaced through Proposition 1B Goods Movement Emission Reduction Program funding, the Carl Moyer Program, and other local incentives programs. This measure continues these programs through 2023.
ONRD-05	Further Emission Reductions from Heavy-Duty Vehicles Serving Near-Dock Railyards	This measure calls for CARB to adopt a regulation or other enforceable mechanism to further reduce emissions from near-dock railyard drayage trucks. The regulation or other enforcement mechanism would require, by 2020, all containers transported between the marine ports and the near-dock railyards to use zero-emission technologies.
OFFRD-01	Extension of the SOON Provision for Construction/Industrial Equipment	This measure seeks to reduce emissions from older, high-emitting off-road diesel engines. Under this measure, incentive programs, such as the Carl Moyer Program and the SOON Provision of CARB's Off-Road rule, would continue to be used to fund equipment replacement and engine repower projects. This measure would extend the current SOON program beyond 2014 to 2023.
OFFRD-02	Further Emission Reductions from Freight Locomotives	This measure carries forward the freight locomotive new technology measures from the 2007 AQMP and calls for replacing existing locomotive engines with Tier 4 engines beginning in 2015 such that by 2023, there will be at least 95% Tier 4 locomotives operating the South Coast.
OFFRD-03	Further Emission Reductions from Passenger Locomotives	Metrolink's Board has adopted a locomotive replacement plan which includes the procurement of Tier 4 locomotive engines to replace its 30 Tier 0 locomotives over a three-year period. In addition, the replacement plans call for repowering the existing Tier 2 locomotives to Tier 4 emission levels, resulting in 100% Tier 4 locomotives by 2023.
OFFRD-04	Further Emission Reductions from Ocean-Going Marine Vessels While at Berth	This measure focuses on ocean-going vessels not subject to CARB's shorepower regulation and seeks to deploy shorepower technologies for an additional 25 percent of the calls not subject to CARB's shorepower regulation.
OFFRD-05	Emission Reductions from Ocean-Going Marine Vessels	This measure calls for incentives to be used to maximize the early introduction and preferential deployment of vessels to the San Pedro Bay Ports with cleaner/new

		engines meeting the new Tier 2 and Tier 3 IMO NO <sub>x</sub> standards.
ADV-01	Actions for the Deployment of Zero and Near-Zero Emission On-Road Heavy-Duty Vehicles	This measure includes two sets of actions. The first set involves the establishment of an optional NO <sub>x</sub> exhaust emission standard that is at least 95 percent lower than the current 2010 on-road exhaust emissions standard. The second set is to develop zero-emission technologies for heavy-duty vehicles that can be deployed in the 2015 to 2035 timeframe.
ADV-02	Actions for the Deployment of Zero-Emission and Near-Zero Locomotives	This measure describes actions needed to commercialize advanced zero-emission and near-zero emission technologies for locomotives that could be deployed in the 2020 to 2030 timeframe.
ADV-03	Actions for the Deployment of Zero-Emission and Near-Zero Cargo Handling Equipment	This measure describes actions to demonstrate and commercialize advanced zero-emission and near-zero emission technologies for cargo handling equipment operated at marine ports, intermodal freight facilities, and warehouse distribution centers that could be deployed in the 2020 to 2030 timeframe.
ADV-04	Actions for the Deployment of Cleaner Commercial Harbor Craft	This measure describes actions needed to commercialize advanced engine control technologies and hybrid systems for commercial harbor craft that could be deployed in the 2020 to 2030 timeframe.
ADV-05	Actions for Deployment of Cleaner Ocean-Going Marine Vessels	This measure describes the actions needed to deploy retrofit technologies on existing Category 3 marine engines to achieve Tier 3 marine engine emissions standards.
ADV-06	Actions for the Deployment of Cleaner Off-Road Equipment	This measure describes the actions needed to commercialize advanced zero-emission and near-zero emission technologies of off-road equipment that could be deployed in the 2020 to 2030 timeframe.
ADV-07	Actions for the Deployment of Cleaner Aircraft Engines	This measure describes the actions needed to develop, demonstrate, and commercialize advanced technologies, procedures, and sustainable alternative jet fuels that could be deployed in the 2020 to 2030 timeframe.

We have evaluated the reliance on the new technology provision of section 182(e)(5) in the 2012 AQMP and have found it to be acceptable. First, the SIP call to which the 2012 AQMP



responds is for an attainment demonstration plan for an area classified as "extreme" for the 1-hour ozone standard. As such, the attainment demonstration can rely on the new technology provision under CAA section 182(e)(5) if attainment cannot be demonstrated through implementation of RACM and enforceable commitments and if the specific criteria and requirements of section 182(e)(5) are met. As noted above, attainment by meeting the emissions targets for the 1-hour ozone standard in the South Coast (410 tpd of VOC and 150 tpd of NO<sub>x</sub>) cannot be met through RACM and enforceable commitments. Second, with respect to the specific criteria and requirements, we find the 2012 AQMP's reliance on new technologies to be acceptable because:

- The 2012 AQMP relies on new technology measures for reductions from a base year of 2008 to an attainment year of 2022, a period of 14 years, and thus does not rely on new technologies to achieve incremental emission reductions required during the first 10 years of the plan; and
- CARB has submitted an enforceable commitment to develop, adopt, and submit contingency measures by 2019<sup>26</sup> (three years before the 1-hour ozone attainment year) to be

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<sup>26</sup> We interpret CARB's contingency measure commitment to be for January 1, 2019 based on the statutory requirement for such measures to be submitted ("no later than 3 years before proposed implementation of the [advanced control technologies measures]"), CAA section 182(e)(5), and the implementation date for implementation of the advanced control technologies measures in the 2012 AQMP by January 1, 2022.

implemented if the anticipated technologies do not achieve the planned reductions.<sup>27</sup>

In addition, we note the progress to date that has been made toward implementing the new technology measures. For example, CARB reports that, in January 2012, CARB adopted the Advanced Clean Cars Program, which combines the control of smog, soot causing pollutants and greenhouse gas emissions into a single coordinated package of requirements for model years 2015 through 2025. In 2013, the California Legislature extended to 2023 two successful incentive programs, the Carl Moyer Program and the Air Quality Improvement Program, that otherwise would have sunset in 2014 and 2015, and provided nearly \$65 million in additional funds. In December 2013, CARB adopted the new optional low-NO<sub>x</sub> standards for on-road heavy-duty engines that are one of the actions called for in the 2012 AQMP's new technology measure ADV-01, listed above in table 6.

Thus, based on the above discussion and evaluation, we find that the reliance on new technology measures as part of the attainment demonstration for the 1-hour ozone standard in the 2012 AQMP satisfies the requirements of CAA section 182(e)(5).

As such, we are proposing to approve the new technology measures

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<sup>27</sup> We also note that the State has committed to meet annually with EPA and to provide annual updates on the status of the 182(e)(5) commitments. See letter from James Goldstene, Executive Officer, CARB to Jared Blumenfeld, Regional Administrator, EPA Region 9, dated August 29, 2011 and letter from Richard Corey, Executive Officer, CARB to Jared Blumenfeld, Regional Administrator, EPA Region 9, dated March 6, 2014.

summarized in table 6 and further described in the 2012 AQMP, appendix IV-B, for 1-hour ozone attainment demonstration purposes and as an update to the new technology provision in the 2007 AQMP for the 1997 8-hour ozone standard.

### **3. Applicable Attainment Date**

As noted previously, in our final SIP call, we indicated that the applicable attainment date for the 1-hour ozone standard in the South Coast is as expeditiously as practicable, but no later than 5 years from the effective date of the final SIP call (i.e., February 6, 2018) but that EPA is authorized to extend the applicable attainment date for a period no greater than 10 years from the effective date of the SIP call (i.e., February 6, 2023) if appropriate given the severity of nonattainment and the availability and feasibility of pollution control measures.

The 2012 AQMP demonstrates attainment of the 1-hour ozone standard by December 31, 2022. To evaluate whether to approve an attainment date of December 31, 2022 for the 1-hour ozone standard in the South Coast, we reviewed the severity of nonattainment and the availability and feasibility of pollution control measures.

First, despite significant progress over the years, for urban areas nationwide, the South Coast nonattainment area has both the highest 1-hour ozone design value concentration and the

highest annual maximum ozone concentrations in the United States. For instance, while the 1-hour design value has decreased from over 0.30 ppm in 1990 to less than 0.15 ppm in 2011 (see figure VII-2-2 in appendix VII of the 2012 AQMP), maximum ozone concentrations still are significantly higher than other metropolitan areas of the United States (see figures VII-2-3 and VII-2-4 in appendix VII) and remain over 20% higher than the standard. The 1-hour ozone problem in the South Coast is complex, the design value monitor has shifted over time, and the problem is compounded by the topographical and meteorological conditions for the area that are very conducive to the formation and concentration of ozone. 2012 AQMP, appendix VII, section 5.

As discussed in the section of this document on control strategies and RACM, the South Coast nonattainment area needs significant reductions in VOC and NO<sub>x</sub> to demonstrate attainment, on the order of 31 percent for VOC and 80 percent for NO<sub>x</sub> from 2008 base year emissions. EPA believes that further reduction of these pollutants is challenging, because the State and local air pollution regulations already in place include most of the readily available VOC and NO<sub>x</sub> control measures. Moreover, attainment in the South Coast nonattainment area must also mitigate the emissions increases associated with the projected increases in population and emissions levels for this high growth area.

The SCAQMD has a long history of adopting new measures and revising existing measures that provide emissions reductions of VOC and to a lesser extent, NO<sub>x</sub>. These measures provide ongoing reductions that contribute towards attainment of the 1-hour ozone standard. The SCAQMD's VOC reductions are achieved primarily from rules governing the petroleum industry, as well as consumer products rules at both the State and local level. These types of control measures present special implementation challenges (e.g., the large number of individuals subject to regulation and the difficulty of applying conventional technological control solutions). NO<sub>x</sub> reductions come largely from SCAQMD rules for fuel combustion sources, NO<sub>x</sub> RECLAIM, and from CARB's mobile source rules.

As provided above, EPA agrees that the implementation schedule for enhanced stationary source controls is expeditious, taking into account the time necessary for purchase and installation of the required control technologies. We believe that it is not feasible at this time to accelerate the emission reduction schedule for the state and federal mobile source requirements, which set aggressive compliance dates for new emission standards and which must rely on fleet turnover over the years to deliver the ultimate emission reductions. In addition, the State has adopted standards for many categories of on-road and off-road vehicles and engines, and gasoline and

diesel fuels, and is relying on existing, approved commitments to continue developing rules for Smog Check Improvements, Expanded Passenger Vehicle Retirement Program, Cleaner Main Ship Engines and Fuel, Cleaner Line-Haul Locomotives, and Off-Road Recreational Vehicle Equipment. EPA believes that the SCAQMD and CARB are implementing these rules and programs as expeditiously as practicable. EPA also expects that SCAQMD and CARB will continue to investigate opportunities to accelerate progress as new control opportunities arise, and that the agencies will promptly adopt and expeditiously implement any new measures found to be feasible in the future. For these reasons and also the need to conduct significant public outreach if applicable control approaches are to be effective, EPA agrees with the SCAQMD and CARB that a December 31, 2022 attainment date for the South Coast for the 1-hour ozone standard is as expeditious as practicable.

#### **4. Air Quality Modeling for the South Coast 2012 1-hour Ozone Attainment Demonstration**

In this section of the document, we discuss the applicable statutory and regulatory requirements for modeled attainment demonstrations, EPA guidance on air quality modeling for ozone standards, the air quality modeling analysis supporting the attainment demonstration in the State's submittal, and our

evaluation of these modeling analyses as part of the attainment demonstration SIP.

**a. CAA and Regulatory Requirements for 1-Hour Ozone Air Quality Modeling and EPA Guidance**

For any ozone nonattainment area classified as serious or above, section 182(c)(2)(A) of the CAA specifically requires the State to submit a modeled attainment demonstration based on a photochemical grid modeling evaluation or any other analytical method determined by the Administrator to be at least as effective as photochemical modeling. In addition, 40 CFR section 51.112 requires that attainment must be demonstrated using applicable air quality models, data bases, and other requirements specified in Appendix W to 40 CFR part 51, as interpreted in EPA guidance. See, e.g., Guideline for Regulatory Application of the Urban Airshed Model, EPA-450/4-91-013 (July 1991); "Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS," EPA-454/B-95-007 (June 1996); "Guidance for the 1-hour Ozone Nonattainment Areas that Rely on Weight-of-Evidence for Attainment Demonstrations, Mid-Course Review Guidance" (March 28, 2002); "Guidance for Improving Weight-of-Evidence Through Identification of Additional Emission Reduction Not Modeled (Nov 1999); "Guidance on the Use of Models and Other Analyses for Air Quality Goals in Attainment Demonstrations for Ozone, PM<sub>2.5</sub>, and Regional Haze," April 2007.

These guidance documents describe the criteria that an air quality model and its application should meet to qualify for use in an ozone attainment demonstration. For more detail on EPA's evaluation of the modeling in the South Coast 1-hour ozone attainment demonstration, see the "Modeling and Other Analyses Attainment Demonstration" memorandum in the docket for today's proposal.<sup>28</sup> The modeling document in the docket also includes a complete list of applicable modeling guidance documents. These documents describe the components of the attainment demonstration, explain how the modeling and other analyses should be conducted, and provide overall guidance on the technical analyses for attainment demonstrations.

As with any predictive tool, inherent uncertainties are associated with photochemical grid modeling. EPA's guidance recognizes these limitations and provides recommended approaches for considering other analytical evidence to help assess whether attainment of the NAAQS is likely. This process is called a weight of evidence (WOE) analysis. EPA's modeling guidance (updated in 1996, 1999, and 2002) discusses various WOE

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<sup>28</sup> Memorandum to Docket EPA-R09-OAR-2014-0185 from Carol Bohnenkamp, Air Quality Analysis Office, EPA Region 9, "Review of the Modeling for the Attainment Demonstration for the Proposed Rulemaking Action on the South Coast 2012 AQMP for the One Hour Ozone Standard", dated May 1, 2014.



analyses. This guidance recommends that all attainment demonstrations include supplemental analyses beyond the recommended modeling. These supplemental analyses provide additional information such as data analyses, and emissions and air quality trends, which would help strengthen the conclusion based on the photochemical grid modeling.

**b. 1-Hour Attainment Demonstration Modeling and Weight of Evidence**

**i. Modeling Approaches for the SCAQMD Attainment Demonstration**

a. Photochemical Grid Model. The model selected for the 2012 1-hour ozone attainment demonstration was developed using the U.S. EPA supported Community Multiscale Air Quality (CMAQ) (version 4.7) air quality modeling platform with Statewide Air Pollution Research Center-99 (SAPRC99) chemistry, and the Weather Research and Forecasting (WRF) model (version 3.3) meteorological fields. The modeling system (including the photochemical model, meteorological inputs, and chemical mechanism) is consistent with the previous advice of outside peer reviewers. CMAQ is a state-of-the-art air quality model that can simulate ozone and PM<sub>2.5</sub> concentrations together in a "one-atmosphere" approach for attainment demonstrations.

b. Episode Selection. The attainment demonstration modeling focuses on 92 days of ozone air quality observed during June through August of the base year 2008. Overall, the 92 day period

provides a robust description of the 2008 ozone meteorological season. During this period, seven well defined multi-day ozone episodes occurred in the Basin with 16 days having daily 1-hour maximum ozone concentrations of 125 ppb or higher at the site with the maximum number of exceedances. When assessed for a normalized meteorological ozone episode potential using a regression based weighting covering 30 years of data (1998-2010), the June 18-22, 2008 period was ranked in the 99th percentile. This episode contained the top four daily ozone maximum concentrations for 2008 in the South Coast and was selected as the focus of the attainment demonstration.

c. Model Performance. Model performance was evaluated in three zones in the South Coast Basin: the San Fernando Valley; the eastern San Gabriel, Riverside and San Bernardino Valleys; and Los Angeles and Orange County. Normalized Gross Bias, Normalized Gross Error, and Peak Prediction Accuracy were determined for each area. Although not a requirement for determining acceptable model performance, the performance statistics were compared to the EPA performance goals presented in guidance documents. The performance goals for Normalized Gross Error and Peak Prediction Accuracy were met in the eastern San Gabriel, Riverside and San Bernardino Valleys. The statistic for bias (Normalized Gross Bias) tends to be negative, indicating that the model tends to slightly under-predict ozone. Both June 18th and June 20th

failed to meet the model acceptance criteria for the unpaired peak analysis. As a result, the attainment demonstration focused on June 19th and 21st, days with observed peak concentrations that closely matched the design values. Based on their analysis, SCAQMD concludes and EPA agrees that model performance is acceptable for this application.

#### **ii. Results of SCAQMD Modeling**

Photochemical model simulations were conducted for the base year 2008 emissions and future-year 2022 baseline and controlled emissions. The 1-hour ozone attainment demonstration was based on the deterministic approach outlined in the "Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS," EPA-454/B-95-007 (June 1996). In addition, the weight of evidence analysis uses the model in a relative sense, using the relative response factor (RRF) technique described in the "Guidance on the Use of Models and Other Analyses for Air Quality Goals in Attainment Demonstrations for Ozone, PM<sub>2.5</sub>, and Regional Haze," April 2007.

a. Modeled Attainment. The model predicted a maximum 1-hour ozone concentration for 2022 of 125 parts per billion (ppb) on June 19th at the Pasadena monitor.<sup>29</sup> All other predicted concentrations during the five-day episode are projected to be

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<sup>29</sup> The national 1-hour ozone standard is 0.12 ppm. Values of 124 ppb or less are not considered exceedances of the standard.

below 124 ppb. The results of the attainment demonstration for 2022 indicate that, allowing for one day per year above the standard, the 1-hour ozone standard would be attained by 2022 at all monitors with the controlled emissions inventory. The attainment targets (410 tpd VOC and 150 tpd NO<sub>x</sub>) are based on both short-term and long-term (i.e., new technology) measures. With the related emissions reductions in place, it is expected that all stations in the South Coast ozone nonattainment area will meet the 1-hour ozone standard during the 2022 ozone season.

b. Weight of Evidence Analysis. The weight of evidence analysis for the ozone attainment demonstration relies on the use of site-specific RRFs being applied to the 2008 weighted design values. The RRFs are determined from the future year controlled and the 2008 base year simulations. The results of the RRF analysis supports the deterministic attainment demonstration and the level of emission reductions needed for attainment. The selection criteria for the episode days and the process of applying the RRFs to the CAMX modeling are discussed in more detail in the modeling document in the docket for today's action.

**c. EPA's Evaluation of the Modeling Demonstration**

Our evaluation of the air quality modeling analyses and supporting information provided in the South Coast 2012 1-hour

ozone attainment demonstration indicate that the South Coast area will attain the 1-hour ozone standard by its December 31, 2022. In addition to the attainment demonstration provided in the South Coast 2012 1-hour ozone attainment demonstration, we have considered supplemental technical information, including ambient air quality monitoring data, which was not available at the time the attainment modeling was performed by SCAQMD. This information is discussed in more detail in the "Review of the Modeling for the Attainment Demonstration for the Proposed Rulemaking Action on the South Coast 2012 AQMP for the One Hour Ozone Standard" memorandum in the docket. The most recent ambient air quality data that we have reviewed indicate that the area is on track to attain the 1-hour ozone standard by December 31, 2022. The 1-hour ozone design value has decreased from 23.4 expected exceedance days in 2000-2002 (average each year) to 5.5 expected exceedance days in 2010-2012. The peak 1-hour concentration has decreased from 0.169 ppm in 2002 to 0.147 ppm in 2012.

Based on the analysis above and in the technical memorandum in the docket, EPA proposes to find that the air quality modeling provides an adequate basis for the 1-hour ozone attainment demonstration in the 2012 AQMP.

### **III. Proposed Action and Request for Public Comment**

For the reasons discussed above, under section 110(k) of the CAA, the EPA is proposing to approve certain ozone-related portions of the 2012 South Coast AQMP as a revision to the California SIP. The relevant portions of the 2012 AQMP that are proposed for approval include the updated control strategy for the 1997 8-hour ozone standard and the demonstration of attainment of the 1-hour ozone standard in the South Coast by December 31, 2022. In so doing, we are proposing to approve the following commitments or measures upon which the 1-hour ozone attainment demonstration relies and that support update the approved control strategy for the 1997 8-hour ozone standard:

- SCAQMD's commitments to develop, adopt, submit and implement the measures as listed in table 5, above, subject to findings of infeasibility and measure substitution, and a commitment to meet aggregate emissions reductions targets of 5.8 tpd of VOC and 10.7 tpd of NO<sub>x</sub> by January 1, 2022;
- The new technology measures listed in table 6, above to achieve emissions reductions of 17 tpd of VOC and 150 tpd of NO<sub>x</sub>; in the South Coast by January 1, 2022; and
- CARB's commitment to submit contingency measures by January 1, 2019 as necessary to ensure that the emissions reductions from new technology measures are achieved.

In proposing approval, EPA finds that an attainment date of December 31, 2022 is appropriate in light of the severity of the 1-hour ozone problem in the South Coast and given the extent to which emissions sources in the South Coast have already been controlled and the difficulty of developing regulations and controlling additional emissions. EPA also finds that the South Coast 1-hour ozone attainment demonstration is based on reasonable estimates and forecasts of ozone precursor emissions and appropriate photochemical modeling techniques and assumptions and an acceptable control strategy.

We are taking public comments for thirty days following the publication of this proposed rule in the Federal Register. We will take all comments into consideration in our final rule.

#### **IV. Statutory and Executive Order Reviews**

Under the CAA, the Administrator is required to approve a SIP submittal that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this proposed action merely approves a state plan as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, October 7, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and



- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this proposed rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the State, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Nitrogen oxides, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

**AUTHORITY:** 42 U.S.C. 7401 *et seq.*

Dated: May 5, 2014.

Jared Blumenfeld,  
Regional Administrator,  
EPA Region IX.

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